

KaryoStudio System Information and Benchmark Performance

System information and benchmark performance data for determining hardware, software, and memory requirements for analysis of Infinium® DNA BeadChips within Illumina’s analysis software for cytogenetics.

Introduction

This document includes the following information:

- **Hardware, operating system, and memory requirements for analysis of Illumina DNA BeadChips using the KaryoStudio software application**
- **Report file sizes**
- **Benchmark performance data for common operations performed on multiple computer setups**

Hardware And Operating System Requirements

Illumina recommends the following hardware and operating systems for your KaryoStudio cytogenetics analysis projects (Tables 1 and 2).

Table 1: Hardware And Operating System Requirements

Minimum System	Recommended System
Intel Pentium IV or newer processor (1.5 GHz)	Intel Pentium IV or newer processor (2.0 GHz)
32-bit system*	64-bit system
4 GB RAM*	4 GB RAM*
100+ GB hard drive	100+ GB hard drive
1,024 x 768 video display	1,024 x 768 video display
Window XP SP2 or Windows Vista operating system	Window XP SP2 or Windows Vista operating system
Microsoft.Net framework 3.5 or above	Microsoft.Net framework 3.5 or above
1 GB or higher network connection	1 GB or higher network connection

*A 64-bit system and 8 GB of RAM are required for analysis of Human1M-Duo BeadChip

Table 2: System Requirements For Infinium HD BeadChips

Beadchip	Processor	System	RAM	Hard Drive
HumanCytoSNP-12	Intel Pentium	32-bit	4 GB	100
HumanCNV370-Quad	4 or newer			GB+
Human610-Quad				
Human660W-Quad				
Human1M-Duo	Intel Pentium	64-bit	8 GB	100
	4 or newer			GB+

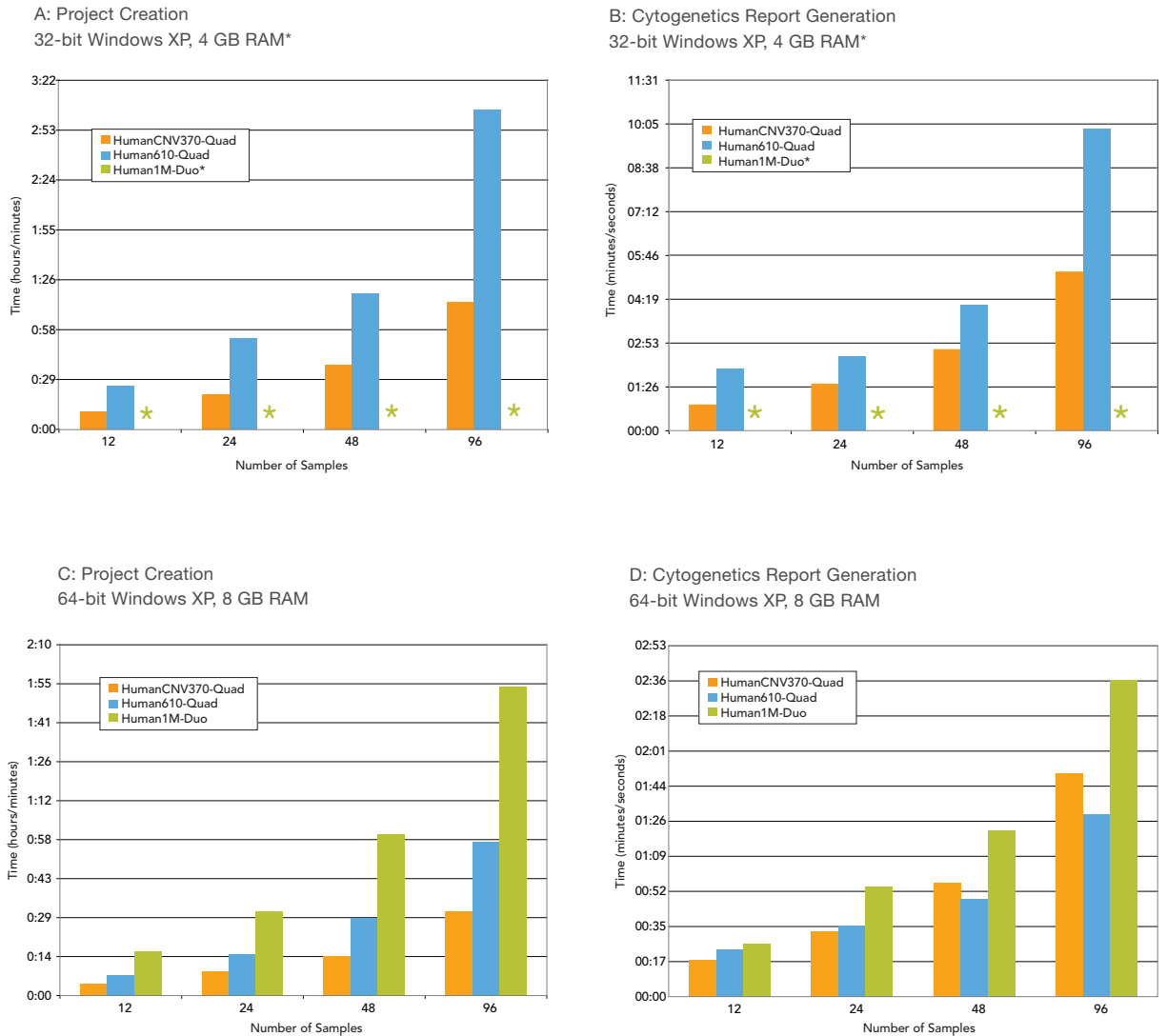
Report File Sizes And Storage

Report file sizes vary based on the Infinium BeadChip used and the number of samples in a project. For example, a *.pdf report containing five aberrations identified from HumanCNV370-Quad BeadChip data will be approximately 200–400 KB in size.

Benchmark Performance

Graphs A and C in Figure 1 provides benchmark performance data for the creation of projects in KaryoStudio, including data importation and scanning by cnvPartition. Graphs B and D display the time required to generate reports. Note that it takes about the same amount of time to create projects and reports for the HumanCytoSNP-12 and Human660W-Quad BeadChips as for the HumanCNV370-Quad and Human610-Quad BeadChips, respectively.

Figure 1: Benchmark Performance Data For Infinium HD BeadChips



Project creation and report generation were performed using cnvPartition v1.0.2. Newer versions of cnvPartition provide additional functionality and may require additional processing time. Note that KaryoStudio only uses file-based storage.

*This configuration has insufficient memory for processing Human1M-Duo BeadChip data.

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